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⑨
BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

367518

367518

Classification (Classified) (Changed to **CONFIDENTIAL**)
By Authority of Joint Chiefs of Staff (Action 16 Apr 49)
By *John P. ...* Date *May 51*

⑥ **OPERATION CROSSROADS.**
U.S.S. LST 545.
TEST BAKER *EVJ-8*

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Director
Defense Atomic Support Agency
Washington, D. C. 20301

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ARMED FORCES
SPECIAL WEAPONS PROJECT

⑪ 1947

⑫ 31p.

OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL **DDC**
JOINT TASK FORCE ONE **DEC 2 1949**
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9355
GROUP-3
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1 JAN 1965

BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

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Washington, D. C. 20301

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F.X. Forest,
Captain, U.S.N.

USS LST 545

Page 1 of 31 Pages

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1 JAN 1965

~~TABLE OF CONTENTS~~

	PAGE NO.
Ship Characteristics Sheet; - - - - -	3
Midship Section; - - - - -	4
Overall Summary of Damage; - - - - -	5
Hull Technical Inspection Report; (Section I) - - - - -	11
Machinery Technical Inspection Report; (Section II) - - -	16
Electrical Technical Inspection Report; (Section III) - - -	21
Photographic Section, (Section IV) - - - - -	27
Commanding Officers Report (Appendix) - - - - -	30

SECRET

USS LST 545

U.S.S. LST 545

SHIP CHARACTERISTICS

Building Yard: Missouri Valley B. and I. Co., Evansville,
Indiana.

Commissioned: 23 March 1944.

HULL

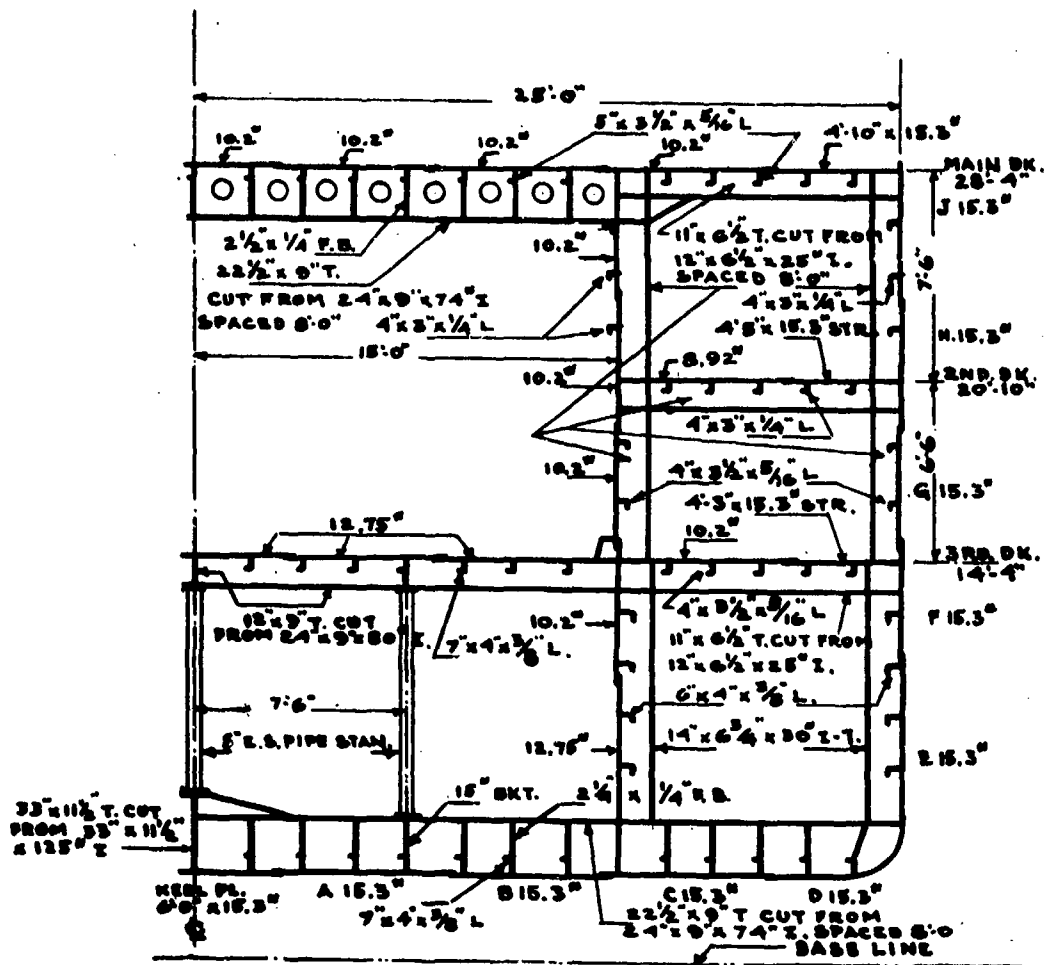
Length Overall: 328 feet 0 inches.
Length on Waterline: 316 feet 0 inches.
Beam (extreme): 50 feet 0 inches.
Drafts at time of test: Fwd. 6 feet 9 inches.
Aft. 12 feet 9 inches.
Limiting displacement: 4,080 tons.
Displacement at time of test: 3,502 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, type:
12 - 567 A. One per main shaft.
Reduction Gears: "Falk" - Single reduction. One
per engine.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Three - 100 KW. 230
volts, D.C. units are installed.

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USS LST 545



MIDSHIP SECTION

TEST B

SECRET

LST 945

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

list. There was no flooding, hence no change in drafts or

(b) Structural damage.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

equipment. There was no structural damage in way of electrical

(c) Other damage.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No damage occurred to electrical equipment due to Test B.

SECRET

USS LST 545

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of heat in way of electrical equipment.

(b) Fires and Explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There were no fires or explosions in way of electrical equipment.

(c) Shock.

HULL

None.

MACHINERY

SECRET

USS LST 545

No evidence.

ELECTRICAL

There was no evidence of shock in way of electrical equipment.

(d) Pressure.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of pressure in way of electrical equipment.

(e) Effects peculiar to the Atomic Bomb.

HULL

None.

MACHINERY

None.

ELECTRICAL

There were no effects peculiar to the Atom Bomb noted in way of electrical equipment.

III. Results of Test on Target.

SECRET

USS LST 545

- (a) Effect on machinery, electrical, and ship control.

HULL

Not observed.

MACHINERY

Machinery was not affected by Test B, as far as can be determined by visual inspection. It was not practicable to operate any machinery on this vessel after Test B.

ELECTRICAL

No damage was apparent to electrical machinery or ship control.

- (b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No damage was apparent.

- (c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

SECRET

USS LST 545

ELECTRICAL

No electrical damage affected watertight integrity or stability.

(d) Effect on personnel and habitability.

HULL

None.

MACHINERY

None, except for possible effects of radioactivity.

ELECTRICAL

No electrical damage affected personnel or habitability.

(e) Effect on fighting efficiency.

HULL

The sole effect on this ship is that resulting from radiological contamination.

MACHINERY

None, except for possible effects of radioactivity. As the ship was fully operable, it is believed that she could have evacuated the contaminated area without being seriously affected.

ELECTRICAL

No electrical damage affected the fighting efficiency of the vessel.

IV. Summary of Observers' Impressions and Conclusions.

SECRET

USS LST 545

HULL

No comment.

MACHINERY

LST 545 was outside the effective range of the explosion during Test B.

ELECTRICAL

No damage due to Test B was evident on any electrical equipment on this vessel. It appears that present electrical equipment has sufficient shock resistance to withstand conditions existing at the distance of this vessel from the blast.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

SECRET

USS LST 545

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

- (b) Structural Damage.

None.

- (c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

None.

- (b) Fires and Explosions.

None.

- (c) Shock.

None.

- (d) Pressure.

None.

SECRET

USS LST545

(e) Effects peculiar to the Atom Bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

The sole effect on this ship is that resulting from radiological contamination.

IV. General Summary of Observers' Impressions and Conclusions.

No comment.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

VI. Instructions for loading the vessel specified the following:

ITEM	LOADING
Fuel oil	50%
SECRET	USS LST545

ITEM	LOADING
Diesel oil	50%
Ammunition	50%
Potable and reserve feed water	No restriction
Salt water ballast	985

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

SECRET

USS LST545

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

No damage was observed.

B. Superstructure.

No damage was observed.

C. Turrets, Guns, and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear..

Not applicable.

E. Weather Deck.

No damage.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not applicable.

I. Interior Compartments (below w.l.).

No damage.

SECRET

USS LST545

- J. Underwater Hull.
No damage.
- K. Tanks.
No damage.
- L. Flooding.
No damage.
- M. Ventilation.
No damage.
- N. Ship Control.
No damage.
- O. Fire Control.
No damage.
- P. Ammunition Behavior.
No damage.
- Q. Ammunition Handling.
No damage.
- R. Strength.
No damage.
- S. Miscellaneous.
No comment.

SECRET

USS LST545

J. Underwater Hull.
No damage.

K. Tanks.
No damage.

L. Flooding.
No damage.

M. Ventilation.
No damage.

N. Ship Control.
No damage.

O. Fire Control.
No damage.

P. Ammunition Behavior.
No damage.

Q. Ammunition Handling.
No damage.

R. Strength.
No damage.

S. Miscellaneous.
No comment.

SECRET

USS LST545

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

- (b) Structural damage.

No comment.

- (c) Other damage.

No comment.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

No evidence.

- (b) Fires and explosions.

No evidence.

- (c) Shock.

No evidence.

- (d) Pressure.

No evidence.

- (e) Effects apparently peculiar to the atom bomb.

None.

SECRET

USS LST 545

III. Effects of Damage.

(a) Effect on machinery and ship control.

Machinery was not affected by Test B, as far as can be determined by visual inspection. It was not practicable to operate any machinery on this vessel after Test B.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None, except for possible effects of radioactivity.

(e) Total effect on fighting efficiency.

None, except for possible effects of radioactivity. As the ship was fully operable, it is believed that she could have evacuated the contaminated area without being seriously affected.

IV. General Summary.

LST 545 was outside the effective range of the explosion during Test B.

V. Preliminary Recommendation.

None.

SECRET

USS LST 545

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The overall condition of the machinery was not changed by Test B, as far as can be determined by visual inspection. There was a few inches of water in the bilges of the main and auxiliary engine rooms after Test A. This is considered to be normal leakage during the extended absence of the crew.

(b) Areas of major damage.

None.

(c) Primary cause of damage in each area of major damage.

There was no apparent primary damage.

(d) Effect of target test on overall operation of machinery plant.

Test B had no apparent effect upon the overall operation of the machinery plant.

NOTE: No machinery on this vessel was operated after Test B.

B. Boilers.

Apparently undamaged. Visual inspection showed no evidence of any damage to the one heating boiler. All piping, valves, gages, etc., are intact.

C. Blowers.

No apparent damage.

SECRET

USS LST 545

D. Fuel Oil Equipment.

No apparent damage.

E. Boiler Feedwater Equipment.

No apparent damage.

F. Main Propulsion Machinery.

No apparent damage.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

Not Applicable.

K. Pumps.

No apparent damage.

L. Auxiliary Generators (Turbines and Gears).

Not Applicable.

M. Propellers.

Not inspected. The propellers were not visible from the surface of the water. There is no reason to believe that they were damaged.

SECRET

USS LST 545

N. Distilling Plant.

No apparent damage.

O. Refrigeration Plant.

No apparent damage.

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc..

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

No apparent damage.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

No apparent damage.

SECRET

USS LST 545

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

1. Drafts and list were the same as before test B.
2. There was no flooding.

- (b) Structural damage.

There was no structural damage in way of electrical equipment.

- (c) Other damage.

No damage occurred to electrical equipment due to test B.

II. Forces Evident and Effects Noted.

- (a) Heat.

There was no evidence of heat in way of electrical equipment.

- (b) Fires and explosions.

There were no fires or explosions in way of electrical equipment.

- (c) Shock.

There was no evidence of shock in way of electrical equipment.

SECRET.

LST 545

(d) Pressure.

There was no evidence of pressure in way of electrical equipment.

(e) Effects peculiar to the Atom Bomb.

There were no effects peculiar to the Atom Bomb noted in way of electrical equipment.

III. Effects of Damage.

(a) Effect on electrical machinery and ship control.

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

No damage was apparent.

(c) Effect on watertight integrity and stability.

No electrical damage affected watertight integrity or stability.

(d) Effect on personnel and habitability.

No electrical damage affected personnel or habitability.

(e) Total effect on fighting efficiency.

No electrical damage affected the fighting efficiency of the vessel.

IV. General Summary of Observers Impressions and Conclusions.

No damage due to test B was evident on any electrical equipment on this vessel. It appears that present electrical equip-

SECRET

LST 545

ment has sufficient shock resistance to withstand conditions existing at the distance of this vessel from the blast.

V. Recommendations.

None.

SECRET

LST 545

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

The overall condition of the electric plant is the same as before the test.

(b) Areas of major damage.

None.

(c) Primary causes of damage in each area of major damage.

None.

(d) Effect of target test on overall operation of electric plant.

1. Ship's service generators: No effect.
2. Engine and boiler auxiliaries: No effect.
3. Electric propulsion: Not applicable.
4. Communications: No effect.
5. Fire control circuits: No effect.
6. Ventilation: No effect.
7. Lighting: No effect.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

Not applicable.

SECRET

C. Electric Propulsion Control Equipment.

Not applicable.

D. Ship's Service Generators.

No damage.

E. Emergency Generators.

Not applicable.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

Not applicable.

J. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

SECRET

LST 545

M. Searchlights.

No damage.

N. Degaussing Equipment.

No damage.

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

Not applicable.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. I. C. and A. C. O. Switchboards.

Not applicable.

V. F. C. Switchboards.

Not applicable.

SECRET

LST 545

SECTION IV

PHOTOGRAPHS

TEST BAKER

SECRET

USS L ST 545



AB-CR-227-289-129. View from off starboard bow after Test B.

SECRET

Page 28 of 31 Pages

USS LST-545

9355



AB-CR-227-289-125. View from off port quarter after Test B.

SECRET

Page 29 of 31 Pages

USS LST-545

9355

APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

SECRET

USS LST 545

Page 30 of 31 Pages

COMMANDING OFFICERS REPORT

REPORT # 5

SECTION - I

Upon inspection of the USS LST 545, no damage was found.

All rigging, main and auxiliary machinery, electrical equipment, and shell plating was found to be intact with no apparent damage from the test.

SECRET

USS LST 545

Page 31 of 31 Pages

END 1 / 66



Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

✓AD-366588 4	XRD-203-Section 12 ✓
AD-366589 ✓	XRD-200-Section 9
AD-366590 ✓	XRD-204-Section 13
AD-366591 ✓	XRD-183
✓AD-366586 X	XRD-201-Section 10 ✓
✓AD-367487 X	XRD-131-Volume 2 ✓
✓AD-367516 4	XRD-143 ✓
✓AD-367493 X	XRD-142 ✓
AD-801410L ✓	XRD-138
AD-376831L ✓	XRD-83
AD-366759 ✓	XRD-80
✓AD-376830L X	XRD-79 ✓
✓AD-376828L X	XRD-76 ✓
✓AD-367464 X	XRD-106 ✓
AD-801404L ✓	XRD-105-Volume 1
✓AD-367459 X	XRD-100 ✓

TRC

18 April 1997

Subject: Declassification of Reports

✓AD-367517✕	XRD-141✓
AD-366762✓	XRD-84
AD-366760✓	XRD-81
AD-366761✓	XRD-82
AD-367501✓	XRD-158-Volume 1
AD-367507L✓	XRD-152-Volume 4
✓AD-367495✕	XRD-184✓
✓AD-367485✕	XRD-129✓
✓AD-367484✕	XRD-128✓
✓AD-367483✕	XRD-127✓
✓AD-367482✕	XRD-126✓
AD-367488✓	XRD-132
✓AD-367480✕	XRD-124✓
AD-801409L✓	XRD-135
✓AD-367490✕	XRD-136✓
✓AD-367492✕	XRD-137✓
AD-801411L✓	XRD-139
AD-367518✕	XRD-140✓
AD-367515✓	XRD-144
AD-367514✓	XRD-145
AD-367468✕	XRD-110-Volume 2✓
AD-367513✓	XRD-146
AD-367497✕	XRD-162✓

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18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114.

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Arldith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center